416-176(R.)

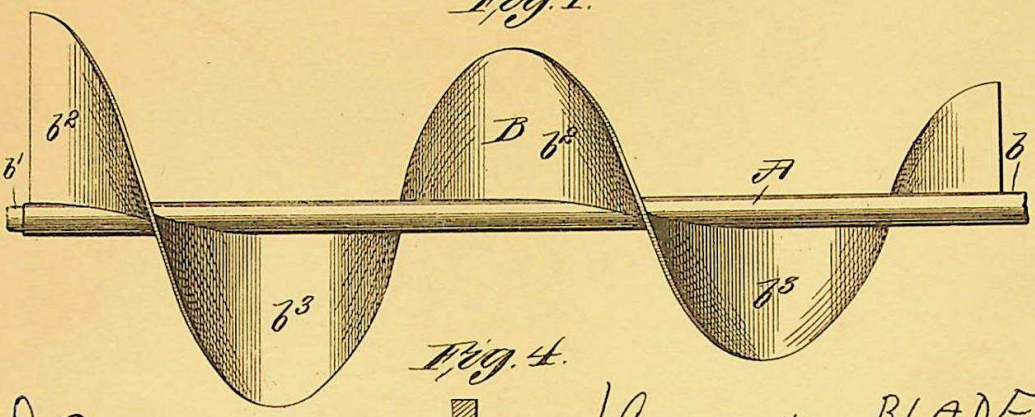
EXAMINER

C. P. BUDD.

SCREW PROPELLER.

No. 550,552. Patented Nov. 26, 1895.

Fig. 1.



UNITED STATES PATENT OFFICE.

CHARLES P. BUDD, OF ST. LOUIS, MISSOURI.

SCREW-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 550,552, dated November 26, 1895.

Application filed July 18, 1895. Serial No. 556,363. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. BUDD, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Screw-Propellers, of which the following is a specification.

My invention relates to screw-propellers for propelling vessels.

The objects of my improvement are, first, to secure increased efficiency; second, to reduce the diameter of the screw, and, third, to reduce the size of the waves produced and make the screw available for use in canals as well as deep water. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the preferred form of my device. Fig. 2 is a rear end elevation. Fig. 3 is a detail view of a central longitudinal section of a portion of a screw-propeller of the form represented in Figs. 1 and 2, showing the preferred form of the blade in cross-section. Fig. 4 is an enlarged detail view of a central longitudinal section of a portion of the same form of screw-propeller, showing the concavity of the preferred form of blade; and Fig. 5 is a side elevation of a modification.

Similar letters refer to similar parts throughout the several views.

A is the stem or hub of the screw.

B is the blade. It is spiral in form, and preferably increases in width from the front end b to the rear end b'. It preferably winds around and is attached to a stem A; but this is not essential. It may, for instance, be attached instead at one end to the end of a stem or shaft; but in any case the inner edge of the blade is preferably substantially equidistant from end to end from a central longitudinal line. Fig. 5 represents an example of this form. Whether it winds around a stem or hub or not it preferably makes two or more turns between its ends, as shown. I consider two turns the best. I prefer to make the length of that portion of the screw-propeller occupied by the blade about twice its greatest diameter where the blade makes two turns; but this is not essential.

The blade of the screw is preferably concave in cross-section on both sides, substantially as represented in Figs. 3 and 4, in which b^2 represents the rear side of the blade and b^3 the front side. The degree of concavity is not essential. This concavity is more desirable on the rear than on the front side. It is only useful on the front side of the blade when the screw-propeller is used in backing.

I claim—

1. A screw propeller having a single tapering spiral blade, widening and having the same pitch from front to rear, and having the inner edge of its blade substantially equidistant throughout from a central longitudinal line.

2. A screw propeller having a single tapering spiral blade, widening from its front to its rear end, and making two turns having the same pitch around a central longitudinal line, from which its inner edge is substantially equidistant throughout.

Witness my hand this 16th day of July, 1895.

CHARLES P. BUDD.

Witnesses:
BENJ. F. REX,
MARK MOODY.